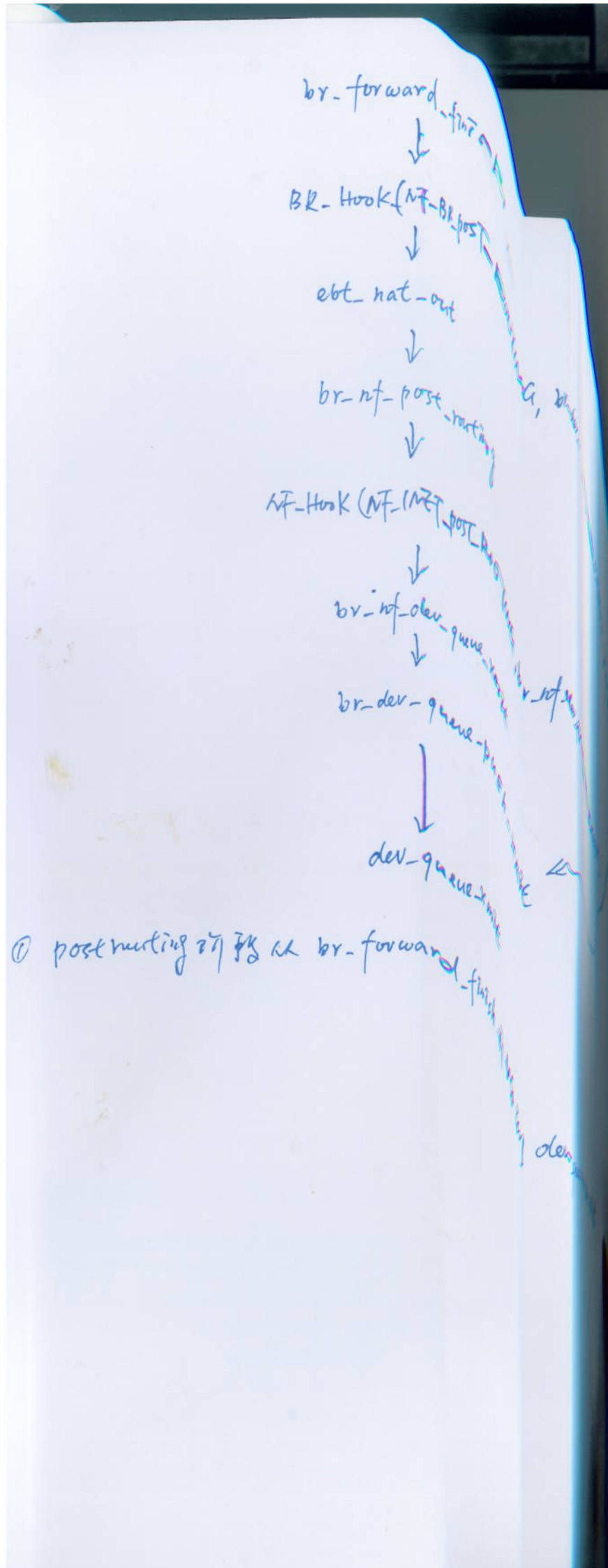


br_forward_finish

↓

BR_Hook(NF_BR_post_[illegible]

↓

ebt_nat_out

↓

br_nf_post_routing

↓

NF_Hook(NF_INET_post_[illegible]

↓

br_nf_dev_queue_[illegible]

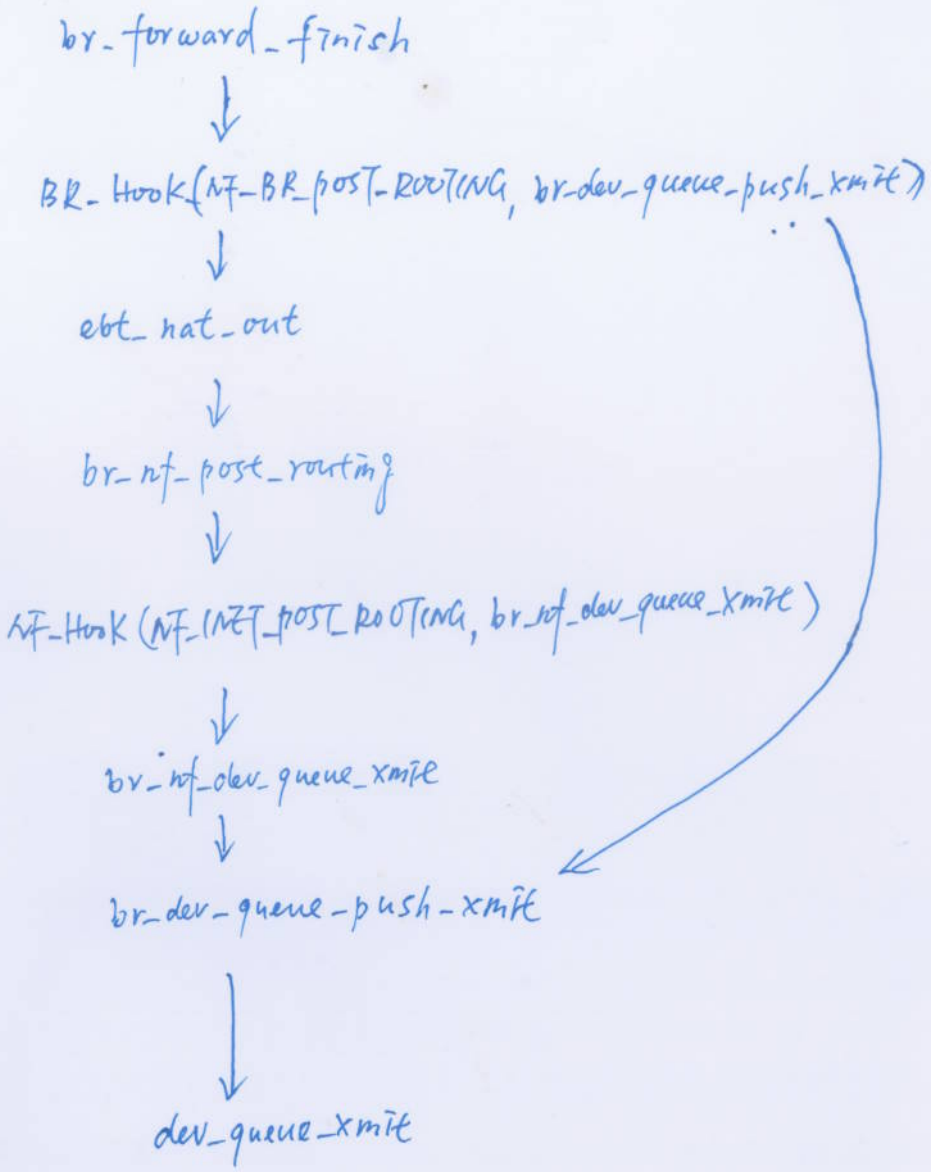
↓

br_dev_queue_[illegible]

↓

dev_queue_[illegible]

① postrouting 과정 시 br_forward_finish [illegible] dev [illegible]



br_forward_finish

↓

BR_Hook(NF_BR_POST_ROUTING, br_dev_queue_push_xmit)

↓

ebt_nat_out

↓

br_nf_post_routing

↓

NF_Hook(NF_INET_POST_ROUTING, br_nf_dev_queue_xmit)

↓

br_nf_dev_queue_xmit

↓

br_dev_queue_push_xmit

↓

dev_queue_xmit

① postrouting 阶段从 br_forward_finish 开始到 dev_queue_xmit 结束

br_handle_frame

↓

ebt_broute

↓

BR_Hook (NF_BR_PRE_ROUTING, br_handle_frame_finish)

ebt_nat_in

↓

br_nf_pre_routing

↓

NF_Hook (NF_INET_PRE_ROUTING, br_nf_pre_routing_finish)

↓

br_nf_pre_routing_finish

需要 bridge

需要 route

NF_Hook_THRESH (NF_BR_PRE_ROUTING, br_nf_pre_routing_finish_bridge, 1)

NF_Hook_THRESH (NF_BR_PRE_ROUTING, br_hand_frame_finish, 1)

br_nf_pre_routing_finish_bridge

dst mac 未知

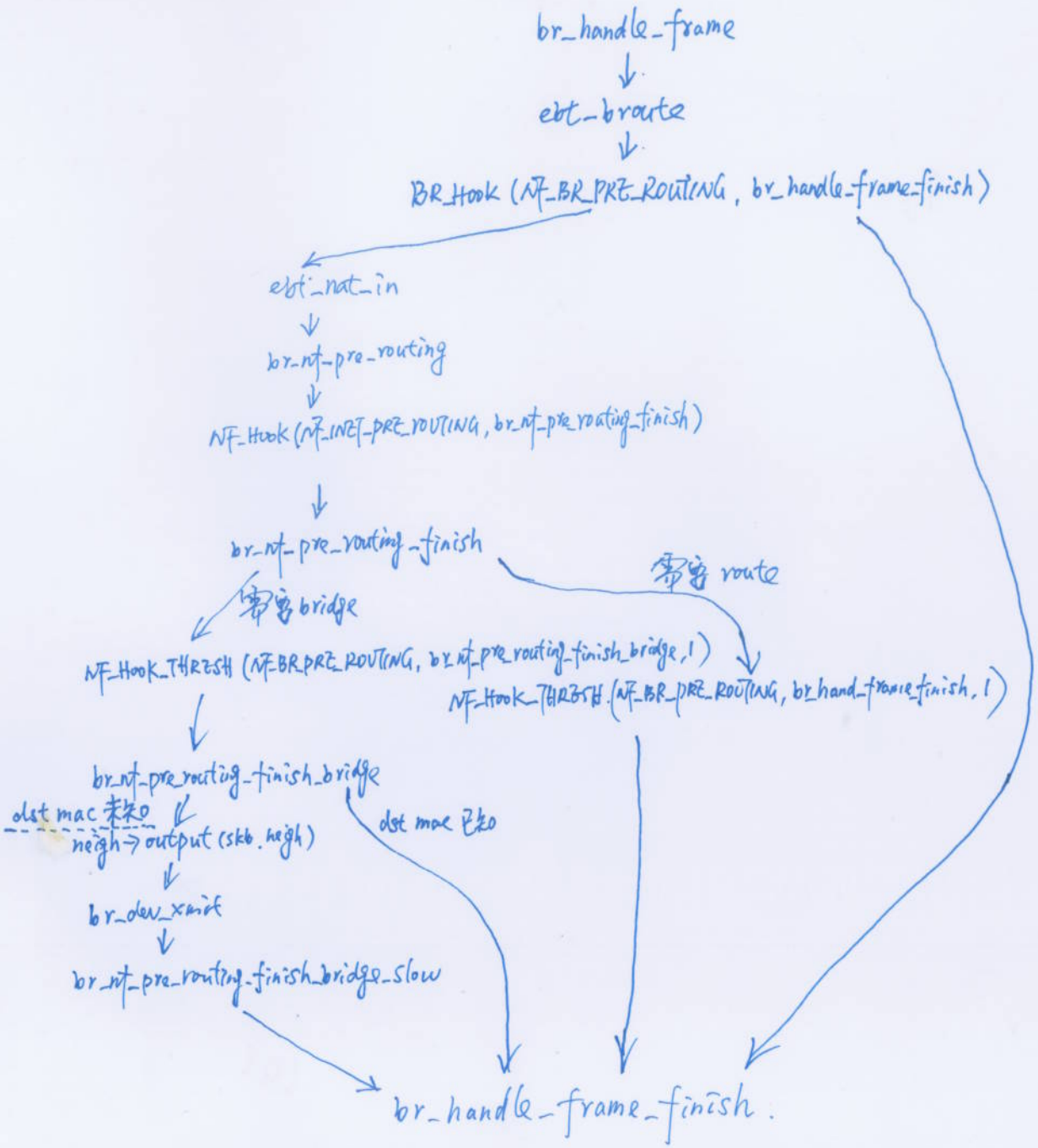
neigh → output (skb, neigh)

dst mac 已知

br_dev_xmit

br_nf_pre_routing_finish_bridge_slow

br_handle_frame_finish.



① prerouting 阶段 从 br_handle_frame 开始，到 br_handle_frame_finish 结束

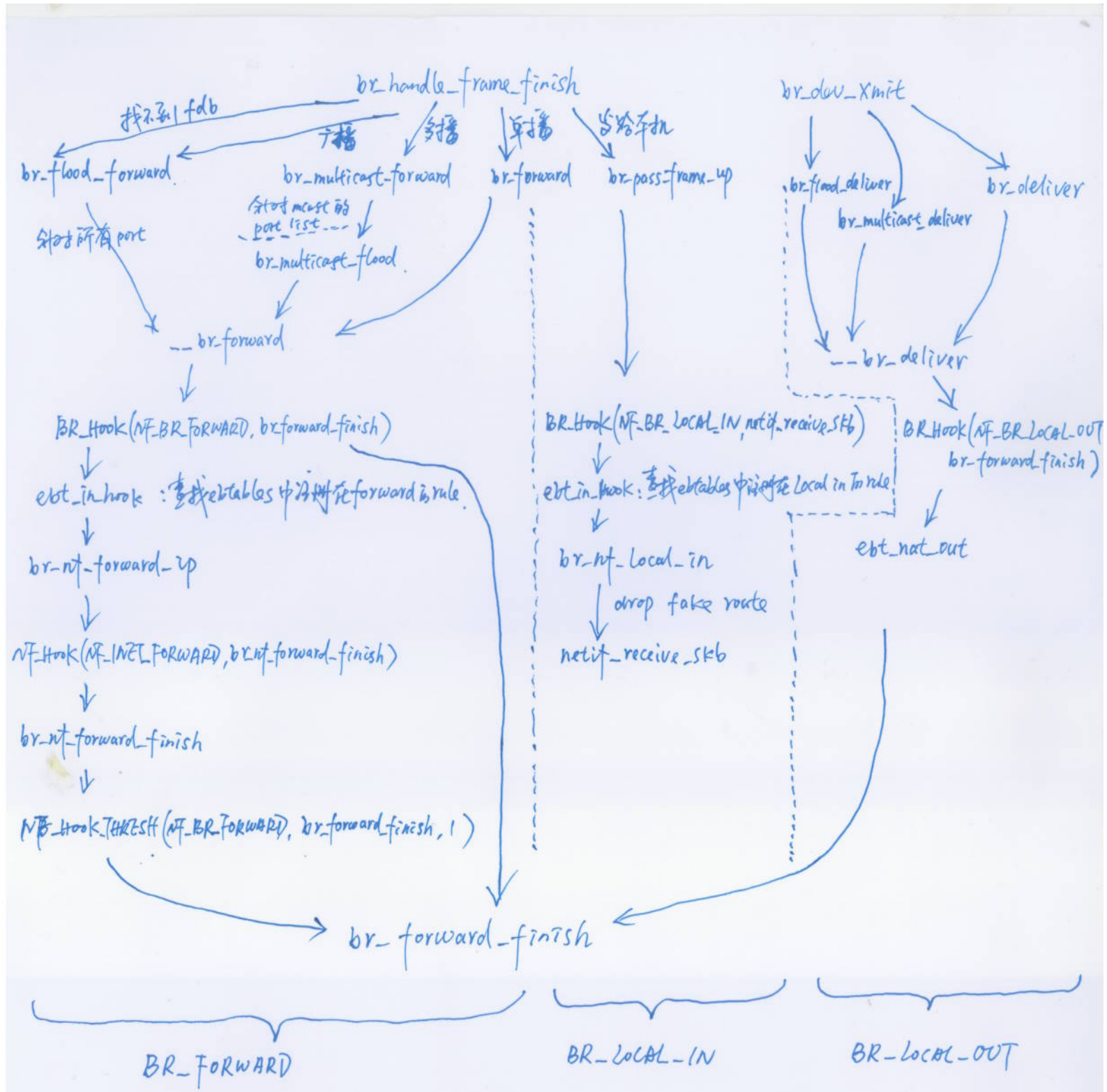
② BR_Hook (NF_BR_PRE_ROUTING, br_handle_frame_finish)

NF_Hook (NF_INET_PRE_ROUTING, br_nf_pre_routing_finish)

NF_Hook_THRESH (NF_BR_PRE_ROUTING, br_nf_pre_routing_finish_bridge, 1)

br_handle_frame_finish, 1

即在调用 iptables 之前和之后都会运行 ebtables




① forward 的帧从 br_handle_frame_finish 开始到 br_forward_finish 结束

Local in 从 br_handle_frame_finish 开始到 netif_receive_skb 结束

Local out 从 br_dev_xmit 开始到 br_forward_finish 结束

② BR_Hook (NF_BR_FORWARD, br_forward_finish)

NF_Hook (NF_INET_FORWARD, br_nf_forward_finish)

NF_Hook_THRESH (NF_BR_FORWARD, br_forward_finish, 1)

都在调用 iptables 之前和之后都会调用 ebtables

③ BR_LOCAL_IN 中并不会调用 iptables 的 NF_INET_LOCAL_IN.